

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 45.165 COSTA | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |
| International application No. PCT/EP 03/04474 | International filing date (day/month/year) 29.04.2003 | Priority date (day/month/year) 02.05.2002 |
| International Patent Classification (IPC) or both national classification and IPC B24B7/06, B24B7/06 | | |
| Applicant COSTA LEVIGATRICI SPA | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 3 sheets.
3. This report contains indications relating to the following items:
- I Basis of the opinion
 - II Priority
 - III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV Lack of unity of invention
 - V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI Certain documents cited
 - VII Certain defects in the international application
 - VIII Certain observations on the international application

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| Date of submission of the demand 01.12.2003 | Date of completion of this report 04.05.2004 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | Authorized Officer Garella, M Telephone No. +31 70 340-2938 |



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP 03/04474

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-7 as originally filed

Claims, Numbers

1-15 received on 23.04.2004 with letter of 21.04.2004

Drawings, Sheets

1/8, 3/8-8/8 as originally filed

2/8 received on 23.04.2004 with letter of 21.04.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.: 16
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP 03/04474

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

see separate sheet

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|------|--------|------|
| Novelty (N) | Yes: | Claims | 1-15 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | 1-15 |
| | No: | Claims | |
| Industrial applicability (IA) | Yes: | Claims | 1-15 |
| | No: | Claims | |

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/04474

Re Item I

The replacement sheets do not meet the requirements of Rule 11.9 and 11.12 PCT

Re Item V

1. The term "abrasive elements...disposed substantially perpendicular to the plane of said support structure" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, because it does not give sufficient indication of the position of the abrasive elements, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 PCT).

In order to draft the present report the above mentioned term has been interpreted as including the features of claim 3 i.e. "each one of said abrasive elements (10) comprises a laminar abrasive element (14) connected to said winding element (8) through a shaft (15) substantially perpendicular to the plane of said support structure"

2. Document US 3 229 423 A (D1) discloses a sanding machine from which the subject-matter of claim 1 differs in that said winding element supports a plurality of abrasive elements spaced from one another, **each one of said abrasive elements comprises a laminar abrasive element connected to said winding element through a shaft substantially perpendicular to the plane of said support structure** and defining two parallel advance directions, said abrasive elements being inclined with respect to the advance directions of said winding elements.

This feature solves the problem of working all the edges of a slab like workpiece and is neither disclosed nor suggested by the available prior art. Consequently the requirements of novelty and inventive step of the PCT are fulfilled (Article 33(2) and (3) PCT).

3. Claims 2 to 15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

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DT04 Rec'd PCT/PTO 15 OCT 2004

CLAIMS

1) Sanding machine (1; 300) comprising:

- a support structure (2; 302) for supporting the piece to be processed and a frame (40) supporting
 - at least a sanding unit (4) for processing said piece, said sanding unit comprising a winding element (8) cooperating with kinematic means (9) for moving it according to a closed ring configuration,

characterized in that said closed ring configuration of said winding element (8) belongs to a plane (π_1) substantially parallel to the plane (π_2) defined by said support structure (2; 302) and in that said winding element (8) supports a plurality of abrasive elements (10) spaced from one another, disposed substantially perpendicular to the plane (π_2) of said support structure (2) and defining two parallel advance directions (18, 19), said abrasive elements (10) being inclined with respect to the advance directions (18, 19) of said winding element (8).

2) Sanding machine (1; 300) according to claim 1) characterized

in that ~~said winding element (8) is constituted by a belt closed to form a ring and cooperating with said kinematic means (9) of the type comprising~~ at least two pulleys (11, 12) between which ~~said belt~~ is wound and motorization means (13) cooperating with at least one (12) of said pulleys (11, 12) to set it rotating.

3) Sanding machine (1; 300) according to claim 1) characterized

in that each one of said abrasive elements (10) comprises a laminar abrasive element (14; 114; 214; 414) connected with said winding element (8) through a shaft (15; 415) substantially perpendicular to said plane (π_2) defined by said support structure (2).

4) Sanding machine (1; 300) according to claim 3) characterized

in that said laminar abrasive element (14; 114; 214; 414) is removably connected with said shaft (15; 415) through holding means (23; 423).

5) Sanding machine (1; 300) according to claim 4) characterized

in that said holding means (23) comprise at least one moving plate (24) suitable for being placed against the laminar abrasive element (14) through the operation of a pawl (25).

6) Sanding machine (1; 300) according to claim 4) characterized

in that said holding means (423) comprise at least one moving plate (424) suitable for being placed against the laminar abrasive element (414) through the action of at least one spring (430) integral with said shaft (415).

7) Sanding machine (1; 300) according to claim 3) characterized

in that said laminar abrasive element (14; 114; 414) is inclined with respect to the advance direction (18, 19) of said winding element (8) to facilitate the removal of material from said piece (3).

5 7.8) Sanding machine (1; 300) according to claim 7) characterized in that said shaft (15) comprises articulation means (22) suitable for defining said inclined position of said laminar abrasive element (14; 114; 414).

10 8.9) Sanding machine (1; 300) according to claim 7) characterized in that it comprises guide means (26) combined with said frame (40), suitable for slidingly receiving said shaft (15) for at least one section during its movement.

15 9.10) Sanding machine (1; 300) according to claim 9) characterized in that said guide means (26) comprise at least one track integral with said frame (40) and are suitable for receiving rolling sliding means (27) combined with said shaft (15).

20 10.11) Sanding machine (1; 300) according to claim 1) characterized in that said support structure (2) can be moved with respect to said sanding unit (4).

25 11.12) Sanding machine (1) according to claim 1) characterized in that said support structure (2) comprises a conveyor belt (5) closed to form a ring between at least one pair of rotating cylinders (6,7).

12.13) Sanding machine (300) according to claim 1) characterized in that said support structure (302) comprises a plurality of rotating rollers (305) positioned side by side.

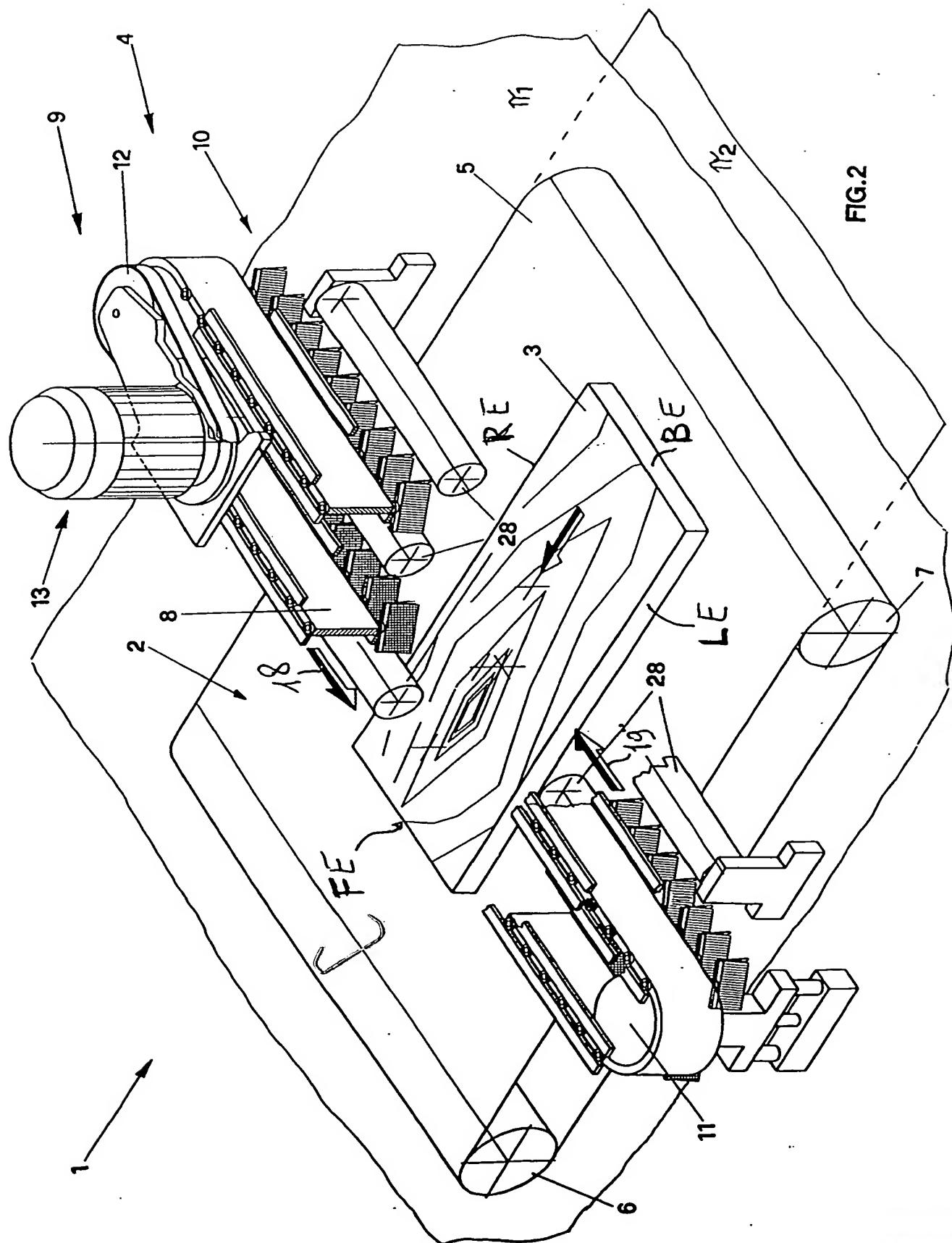
30 13.14) Sanding machine (1; 300) according to claim 1) characterized in that said sanding unit can be moved with respect to said support structure.

14.15) Sanding machine (1; 300) according to claim 1) characterized in that it comprises suction means combined with said support structure and suitable for keeping said piece adherent to said support structure.

35 15.16) Sanding machine (1; 300) according to claim 1) characterized in that it comprises one or more pressing elements (28) combined with said frame, suitable for being placed in contact with said piece (3) to keep it adherent to said support structure (2).

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AMENDED SHEET